What is the relationship between snacking and body weight in adults?

Conclusion

Limited and inconsistent evidence suggests that snacking is associated with increased body weight.

Grade: Limited

Overall strength of the available supporting evidence: Strong; Moderate; Limited; Expert Opinion Only; Grade not assignable For additional information regarding how to interpret grades, click here.

Evidence Summary Overview

The literature review identified two prospective cohort studies (Halkjaer, 2009; Woo, 2008). The studies were conducted in Sweden and Hong Kong. Studies ranged in sample size from 1,010 (Woo, 2008) to 22,570 (Halkjaer, 2009). In the study of Halkjaer et al, (2009), diets high in snack food were associated with increased waist circumference over the five-year follow up period. Increased variety of snack food was associated with increased weight gain over a five- to nine-year follow-up period in the study of Woo et al, (2008).

The Committee did not review the literature on the use of snacking as a tool for adults actively losing weight.

Evidence summary paragraphs:

Cohort Studies (2)

Halkjaer J et al, 2009 (positive quality) conducted a prospective cohort study in Denmark to investigate the association between intake from 21 food and beverage groups and the subsequent five-year difference in waist circumference (WC). Data were from the Danish diet, Cancer, and Health Study. Subjects were enrolled from 1993 to 1997, and follow-up occurred five years later, from 1999 to 2002. Baseline weight, height and WC were measured by study personnel, and follow-up measurements were self-reported by subjects. Dietary intake was assessed at baseline using a 192-item, semi-quantitative food frequency questionnaire (FFQ). The final sample included 22,570 women (mean age at baseline was 56 years; mean BMI at baseline was 25kg/m^2) and 20,126 men (mean age at baseline was 55 years; mean BMI at baseline was 26kg/m^2). The five-year difference in WC was positively associated with energy intake from snack foods for women (0.06, 95% CI: 0.003 to 0.11) and men (0.09, 95% CI: 0.05 to 0.13) ($P<0.05$). The authors concluded that a diet high in snack foods is associated with larger WC gain in women and men.

Woo J et al, 2008 (positive quality) conducted a prospective cohort study in Hong Kong to examine dietary factors associated with overweight and obesity. Subjects were recruited in 1995 and 1996 and were followed for five to nine years. Height and weight were measured, and BMI was calculated. Dietary assessment was done via a FFQ at baseline. The final sample included 1,010 subjects (mean age, 46 years). Increased variety of snack consumption was associated with increased risk of developing overweight over the five- to nine-year follow-up period (OR 1.45, 95% CI: 1.06 to 1.98, $P<0.05$). The authors concluded that increase variety of snack consumption may predispose

adults to weight gain over a five- to nine-year period.

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Author, Year, Study Design, Class, Rating	Participants/Location	Methods	Outcomes
Halkjaer et al 2009 Study Design: Prospective cohort study Class: B Rating:	N=22,570 women (mean age at baseline, 56 years; mean BMI at baseline, 25kg/m^2) and 20,126 men (mean age at baseline, 55 years; mean BMI at baseline, 26kg/m^2). Location: Denmark.	Data were from the Danish diet, Cancer, and Health Study. Subjects were enrolled from 1993 to 1997, and follow-up occurred five years later, from 1999 to 2002. Baseline weight, height and WC were measured by study personnel, and follow-up measurements were self-reported by subjects. Dietary intake was assessed at baseline using a 192-item, semi-quantitative FFQ.	The five-year difference in WC was positively associated with energy intake from snack foods for women (0.06, 95% CI: 0.003 to 0.11) and men (0.09, 95% CI: 0.05 to 0.13, P<0.05).
Woo et al 2008 Study Design: Prospective cohort Class: B Rating:	N=1,010 subjects (mean age, 46 years). Location: Hong Kong.	Subjects were recruited in 1995 to 1996 and followed for five to nine years. Height and weight were measured, and BMI was calculated. Dietary assessment was done via a FFQ at baseline.	↑ variety of snack consumption was associated with ↑ risk of developing overweight over the five- to nine-year follow-up period (OR 1.45, 95% CI: 1.06 to 1.98, P<0.05).

Research Design and Implementation Rating Summary
For a summary of the Research Design and Implementation Rating results, click here.

Worksheets

Halkjaer J, Tjønneland A, Overvad K, Sørensen TI. Dietary predictors of 5-year changes in waist circumference. J Am Diet Assoc. 2009 Aug;109(8):1356-66.

Woo J, Cheung B, Sham A, Lam TH. Influence of dietary pattern on the development of overweight in a Chinese population. Eur J Clin Nutr. 2008 Apr; 62(4):480-7.